

**EOSDIS IV&V  
Monthly Status Report  
For the Period 4/1/97 to 4/30/97  
(Deliverable 0201D.8)**

**May 15, 1997**

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## **1. PERFORMANCE INFORMATION**

### **1.1 Contract Organization Chart**

Exhibit 1-1 illustrates the current organizational structure of the EOSDIS IV&V team. The approximate number of personnel assigned to each technical task during April is also indicated.

### **1.2 Programmatic Information**

#### **a) Key Recent Accomplishments**

- Submitted WV transition status reports to NASA via e-mail on 4/15 and 4/30. Currently have 7 personnel committed to transition to WV in the next several months.
- Finalized EOSDIS orientation/training materials for new hires in WV.
- Continued supporting initiatives to integrate the various Requirements Databases within the program (i.e., MTPE, ECS, EDOS, EBNet).
- Continued on-going training of contract personnel. Training in April included attendance at a SafeSuite seminar which culminated in two employees becoming security certified engineers; attendance at the FOS Functionality Demonstration held on 4/23/97; classes/coursework in Mission Planning and Scheduling, UNIX, Network Management, and Sybase/Transact SQL; and employee self-training in Rational Rose using tutorials, documentation, and sample code.
- Ensured on-time delivery of contract deliverables as indicated in Exhibit 1-2.

#### **b) Planned Activities**

- Continue WV transition effort, and submit semi-monthly status reports to NASA.
- Provide inputs to task SOWs for Year 4 of the contract.
- Continue on-going training of contract personnel. Tivoli System Administration training is scheduled for 6/9 - 6/11. Other future training initiatives include X-Runner training for Task 11 personnel, OMT and Rational ROSE training for Task 8 new hires, and Sybase System 11 training for system administration. Also, plan to attend training on OOA/OOD, C++, NCRs/DDTS, and the Evolutionary Build Process at the ECS facility as slots are made available to the IV&V team.

**Exhibit 1-1: Org Chart (Landscape)**

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Expected Date Due	Dependency	Milestone/Deliverable	Task #	Status*	Comments
4/1/97		EGS I&T Program Test Matrix (Updates)	11	C	Submitted on time.
4/14/97		RTM Qualitative Assessment TAM	8	C	Submitted on time.
4/15/97		Monthly Status Report	2	C	Submitted on time.
4/15/97		CCR Impact Analysis Forms	8	C	Submitted on time.
4/15/97		EGS I&T Program Test Package (Version 1 TRMM Science Data Processing)	11	C	Submitted on time.
4/22/97		ICWG Open Interface Issues Summary Report	8	C	Submitted on time.
4/30/97		Monthly Metrics Reports	8	C	Submitted on time. Combined with RTM Quantitative Assessment TAM.
4/30/97		RTM Quantitative Assessment TAM	8	C	Submitted on time. Combined with Monthly Metrics Report.
6/15/97		EGS V1 Test Report - Flight System	11	C	Submitted ahead of schedule on 4/30/97.
5/13/97	One week prior to CCB or ICWG meeting	CCR Impact Analysis Forms	8	IP	
5/16/97		EOSDIS Security Policy and Guidelines (Update - Final)	8	IP	
5/19/97	RTM release + 4 weeks	RTM Qualitative Assessment TAM	8	IP	
5/20/97	At monthly ICWG	ICWG Open Interface Issues Summary Report	8	IP	
5/23/97		TRMM Vulnerability Test Strategy TAM	8	IP	
5/30/97	RTM + 2 weeks and/or end of month	Monthly Metrics Reports	8	O	
5/30/97	RTM release + 2 weeks	RTM Quantitative Assessment TAM	8	O	
5/30/97		EGS I&T Confidence Test Program (Update, Rev 2)	11	O	
5/97		Release B.0/B.1 RBR Analysis TAM	8	IP	
5/97	Monthly	EGS I&T Program Test Matrix (Updates)	11	IP	
5/97		Revised EGS I&T Plan	11	O	

\* C = Completed, IP = In Process, O = Open, D = Delayed, CX = Canceled

**EXHIBIT 1-2: Status of Milestones/Deliverables**

### **1.3 Technical Task Information**

#### **Task # 4: IV&V Infrastructure and Tool Development**

##### **a) Task Accomplishments**

- Imported new ECS RTM baseline that was received from Hughes on 4/18/97.
- Executed metrics reporting queries against new ECS RTM baseline and supplied results to Task 8 personnel.
- Attended ESDIS Requirements Database Engineering Team (ERDET) meetings on 4/15 and 4/29.
- Created the ESDIS-to-ISE transfer utility to transfer L1 through L3 ESDIS RTM requirements and traces into the ISE Sybase database. This is the initial step taken to build an integrated requirements database that crosses project element (ESDIS, ECS, EDOS, etc.) boundaries. Once the database is built, discrepancy reports and bi-directional impact/trace reports can be generated which cross project element boundaries.
- Modified the TMDB to provide for on-line maintenance of all combo box values and to provide requirement maintenance capabilities.
- Modified the Test Verification Database (TVDB) to account for schema changes.
- Continued M&O activities for the Project Issue Tracking System (PITS), Automated Requirements Database (ARDB), Test Management Database (TMDB), and contract homepages.

##### **b) Issues/Concerns**

- None.

##### **c) Subcontractor Performance**

- EWA's performance has been very good. Specific activities included maintaining and operating the Test Management Database (TMDB), as well as supporting the release of the Test Verification Database (TVDB).

**d) Planned Activities**

- Generate discrepancy reports and bi-directional trace reports based on the newly created integrated requirements database which spans project elements (ESDIS, ECS, EDOS, etc.).
- Initiate development of World Wide Web based query interface to newly created integrated requirements database.
- Release a new version of the TMDB that consolidates all the reporting, TST, and data export capabilities.
- Continue to reconfigure IV&V databases, homepages, and tools as necessary to support ECS Release B IV&V analysis and I&T activities.
- Install new RTM baselines as they are received. Produce related reports. Transfer data to ISE Sybase databases as required.
- Continue support (refinement, development, and maintenance) for the ARDB, PITS, TVDB, and TMDB client/server tools.
- Continue maintenance for the EOSDIS IV&V Homepage, EGS I&T Homepage, and the PITS WWW Browser Homepage.

**Task # 8: Development Life Cycle Analysis**

**a) Task Accomplishments**

***Planning and Rapid Analysis Team:***

- Conducted a quantitative analysis of the 4/18/97 RTM Repository. Prepared the Monthly Metrics Report / RTM Quantitative Analysis report for ECS development activities for April 1997.
- Recommended requirements management process and tooling improvements to support White Paper being developed by Mark Simons (ESDIS Requirements Manager). As part of this activity, participated in ESDIS Requirements Database Engineering Team (ERDET) meetings on 4/15 and 4/19.
- Performed CCR data entry into Hughes' RTM repository to support 4/18/97 and 5/16/97 RTM releases.
- Met with Rational technical representatives on 4/21 to discuss tooling capabilities to support potential IV&V reverse-engineering analysis and activities.



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- Completed Release B.0/B.1 requirements by release (RBR) analysis and allocation. Began documenting findings and recommendations in TAM to be delivered in early May.

***System and Interfaces Analysis Team:***

- Completed qualitative analysis of 3/14/97 RTM baseline and delivered TAM on 4/14/97.
- Started analysis of the 4/18/97 RTM baseline.
- Input revised issue status information, as provided by book bosses, into the PITS-ICWG repository (ongoing). Prepared summary reports and metrics for the following deliverables:
  - ◊ PITS-ICWG Summary Report
  - ◊ April Monthly Metrics Report
- Attended regular EOS SIT, ICWG meetings.
- Reviewed and provided comments on 13 CCRs, and participated in ICWG meetings to present our CCR impact analyses. CCRs reviewed included the following:

CCR #	Title
505-10-35-002	Update AM-1 DFCD PDB, Volume 1 Generic and Volume 2 AM-1 Specific
505-41-33-005	Add report contents to SCF ICD
505-41-32-005	Re-baseline the ECS to Landsat 7 ICD for Release B
505-01-41-147	Add requirement for CERES event for solar calibration (F&PRS)
505-01-41-148	Update the Ancillary Data Products List -Table 3-1 of F&PRS
505-41-40-004	Remove TRMM and Release A from the GSFC DAAC ICD
505-01-30-013	System & networking/communications requirements updates to L2 Vol. 0
505-01-30-014	Landsat 7 L1 processing updates to L2 requirements documents
423-41-54-001	Baseline the ECS to DAS IRD
505-41-42-002	Work-off plan issues resolution for ECS-ORNL ICD
423-01-36-018	Baseline the EBNet-ASTER ICD
423-01-36-019	Baseline the EBNet-TSDIS ICD
423-10-33-001	Baseline the ESDIS-SeaWinds IPA

***System Modeling Analysis Team:***

- Attended ECS modeling meeting and final CSC modeling meeting.

***System Security Analysis Team:***

- Received feedback from DAAC Managers on the EOSDIS Security Policy and Guidelines document. Currently updating document for final release in May.

- Participated in UNIX self-paced tutorials in preparation of SafeSuite training.
- Received formal training in the use and capabilities of SafeSuite on 4/30 - 5/1. This tool will be used to determine system/network vulnerabilities associated with the EOSDIS.
- Explored security issues associated with EOSDIS customer billing, intruder tampering, and sniffer software, as requested by the ESDIS Information Technology Security Official (EITSO). This information will be developed into a future TAM.

***Test Analysis and Witnessing Team:***

- Continued review of the Release B Integration and Test procedures and Acceptance Test procedures. Attended Release B.0 Landsat-7 system verification procedures walkthrough.
- Began analyzing RBR requirements needed to satisfy Release B.0/B.1 functional capabilities identified by Data Server Working Group (DSWG).
- Supported ECS Toolkit testing, focusing on HDF and HDF-EOS portions. Tested software, developed scripts and drivers to support testing, identified problems and wrote NCRs, verified requirements coverage, verified completeness and consistency of supporting documentation, and attended daily toolkit status meetings.
- Continued witnessing Pre-Release B Testbed testing and attended related status meetings at Hughes.

**b) Issues/Concerns**

- Given the recent EOSDIS program replanning and restructuring, future Task 8 tasking is somewhat undefined. We need specific guidance on the activities NASA wants us to perform. ESDIS Project feedback and approval is needed on proposed IV&V activities based on recent re-direction. Inputs to a new SOW will be drafted to establish a point of departure.
- The lack of access to a current ECS Release B design continues to constrain level of design analysis achievable by IV&V.
- ECS code is needed to fully understand the reverse engineering capabilities and limitations of the Rational Rose tool with respect to ECS. We have been unsuccessful to date in obtaining ECS code.
- IV&V Release B test analysis and test witness planning activities are constrained by the lack of definitive ECS system verification plans, procedures, schedules, and RTM traceability data.

- The purchase of the SafeSuite tool has still not occurred. This tool is needed before a workable test schedule can be coordinated with EOSDIS TRMM entities.

**c) Subcontractor Performance**

- CTA is leading the SIA Team. Their technical staff also supports other integrated analysis teams within Task 8. Their performance has been very good.
- SES is leading the TAW Team. Their technical staff also supports other integrated analysis teams within Task 8. Their performance has been very good.

**d) Planned Activities**

***General:***

- Support development of revised Task 8 SOW.
- Work to resolve outstanding Technical Issue Memoranda (TIMs).

***Planning and Rapid Analysis Team:***

- Analyze requirement mappings to Release B design and test cases if available in the May release of RTM.
- Begin quantitative analysis of the 5/16/97 release of RTM and prepare the Monthly Metrics / RTM. Quantitative Analysis Report to be delivered two weeks following the availability of the data.
- Continue Rational Rose internal training. Obtain ECS code to determine the effort needed to produce a quality design using the reverse-engineering feature of the tool.
- Continue supporting Hughes' requirements team by entering CCRs into their RTM.
- Continue supporting efforts to improve ESDIS requirements management processes, including planning and defining requirements tooling needs, defining IPT and PCMB charters, and attending biweekly ERDET meetings.

***System and Interfaces Analysis Team:***

- Provide interface engineering support to the ECS external interface audit to be conducted during May.
- Continue review of new CCRs.
- Continue data entry into PITS ICWG repository, and present at next ICWG status meeting scheduled for 5/20.

- Complete qualitative requirements analysis of the 4/18/97 release of RTM; develop TAM documenting findings to be submitted on 5/19/97.
- Begin qualitative requirements analysis of the May release of RTM.

***System Modeling Analysis Team:***

- Close out all activities due to cancellation of ESDIS modeling tasks.

***System Security Analysis Team:***

- Establish EOSDIS Internet Security Assessment Team (E-ISAT), consisting of IV&V, SI&T, and CSC personnel. Develop charter.
- Produce bulletin to EOSDIS community introducing SafeSuite, its capabilities, and its availability for use.
- Present briefing on SafeSuite capabilities to EOSDIS Security Working Group (ESWG).
- Complete update to EOSDIS Security Policy and Guidelines document, due on 5/16/97.
- Document strategy for TRMM Vulnerability Testing, due on 5/23/97.
- Plan TRMM Vulnerability Tests at GSFC and LaRC DAACs.

***Test Analysis and Witnessing Team:***

- Continue toolkit testing, as requested.
- Continue supporting Release B.0 system verification procedures walkthroughs, including reviewing test procedures, analyzing requirements traceability, and providing comments and recommendations to ESDIS and ECS test team.

**Task # 11: EOS Ground System Integration and Test**

**a) Task Accomplishments**

***EGS Version 1 Test Planning:***

- Delivered EGS Version 1 TRMM Science Data Processing Test Packages on 4/15/97.
- Continued work with NYMA and GSFC DAAC to coordinate/streamline test activities.

***Integration Schedule Tracking and Analysis:***

- Completed EGS I&T test streamlining schedule analysis.
- Continued ECT2 test planning and schedule.

***Integration Test Tool Definition and Plans:***

- Collected monthly test package metrics.
- Revised Test Management Data Base (TMDB) test tool.
- Completed TMDB database and Hughes RTM import in order to complete AT/EGS I&T requirement mapping reports in support of test streamlining analysis.
- Captured test program metrics, including test execution results.

***EGS Confidence Test Planning:***

- Supported I&T Integrated Product Team and TICTOC activities.
- Delivered updated EGS I&T Program Test Matrix.
- Continued B0/B1 test package allocation analysis.
- Participated in ESDIS Test Data Set working group and EDOS TOG meetings.
- Continued Landsat 7 MRTT coordination; revised Landsat 7 EGS I&T test plan.

***EGS Version 1 Integration and Test:***

- Submitted Version 1 Test Report Flight System.
- Supported FOS DRB, ETS DRB, EDOS with DRs.

**b) Issues/Concerns**

- We need to continue developing relationships with our joint test partners. This is especially important when trying to schedule resources.

**c) Subcontractor Performance**

- Subcontractor performance has been very good.

**d) Planned Activities**

- Continue to plan EGS I&T Science/Systems IPT test package targets. Deliver revised EGS I&T Plan.

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- Continue to plan EGS I&T test data plan target dates, working with EGS I&T Test Data Coordinator.
- Continue to work TRMM TSS EGS I&T test packages and coordinate inputs.
- Continue Landsat 7, AM-1, Sage III Mission joint test planning.
- Complete monthly metrics, matrix update, and ongoing task support activities.

## **2. FINANCIAL/CONTRACTUAL INFORMATION**

**This Section  
Has Been Removed  
Due to Proprietary Content.**